

In the United States Court of Federal Claims

NOT FOR PUBLICATION

No. 21-911C

(Filed: March 24, 2023*)

POWER DENSITY SOLUTIONS, LLC)	
and JAMES J. HILDEBRANDT ,)	
<i>Plaintiffs,</i>)	Patent infringement; Standing; Assignment of Claims Act,
v.)	31 U.S.C. § 3727; Patent Rule 4: Infringement contentions.
UNITED STATES ,)	
<i>Defendant.</i>)	

Trevor Q. Coddington, Insigne PC, Austin, TX, for plaintiffs.

Grant D. Johnson, Trial Attorney, Commercial Litigation Branch, Civil Division, U.S. Department of Justice, Washington, DC, for defendant, with whom on the briefs were *Brian M. Boynton*, Principal Deputy Assistant Attorney General, and *Gary L. Hausken*, Director, *Philip Charles Sternhell*, Assistant Director, and *David L. Pace*, Trial Attorney, Commercial Litigation Branch, Civil Division, U.S. Department of Justice, Washington, DC.

OPINION AND ORDER¹

BONILLA, Judge.

Power Density Solutions, LLC (Power Density) and James J. Hildebrandt—assignee and inventor, respectively, of two patents related to electronics cooling

* This Opinion and Order was originally filed under seal on March 17, 2023, in accordance with the Protective Order entered in this case. The Court provided the parties an opportunity to review the decision for any proprietary, confidential, or other protected information and submit proposed redactions. On March 23, 2023, the parties jointly proposed several limited and justified redactions. Accordingly, the Court accepts the proposed redactions and reissues the Opinion, with redacted language replaced with the following: “[XXXXX].”

technologies—filed this patent infringement action against the United States. In their complaint, as amended, plaintiffs allege participants in a federally funded research and development program, including a number of research institutions and defense contractors, developed certain infringing products.

On April 8, 2022, the Court dismissed plaintiffs’ claims against the identified research institutions for lack of subject matter jurisdiction. *See Power Density Sols. LLC v. United States*, 159 Fed. Cl. 208, 215–18 (2022). Pending before the Court is the government’s Motion to Strike Plaintiffs’ Preliminary Infringement Contentions as to claims concerning the identified defense contractors (ECF 45). Through an Order to Show Cause, the Court directed the parties to address, *inter alia*, Mr. Hildebrandt’s standing and the disputed sufficiency of plaintiffs’ infringement contentions. For the reasons set forth below, Mr. Hildebrandt is TERMINATED for lack of standing and Defendant’s Motion to Strike is GRANTED.

BACKGROUND²

I. Patents-in-Suit and Accused Products

Power Density claims to be the assignee of U.S. Patent Nos. 6,313,992 (the ’992 patent) and 6,552,901 (the ’901 patent). Both patents list Mr. Hildebrandt as the sole inventor. The patents describe systems and methods for cooling electronic components by directing a cooling fluid through a network of interior passageways formed within electronic components and on their surfaces. *See ’992 patent at Abstract, col. 3:14–35; ’901 patent at Abstract, col. 2:61–3:3.* Both patents expired on December 21, 2019.

According to plaintiffs, the accused infringing products were developed through the Intrachip/Interchip Enhanced Cooling (ICECool) program administered by the U.S. Defense Advanced Research Projects Agency (DARPA). The ICECool program was an initiative to explore advanced solutions to cool computer circuitry and other electronic components, particularly in military electronic systems. The program consisted of a Fundamentals phase—focused on scientific and engineering research performed by research institutions—and, relevant here, an Applications phase—involving the development of prototype systems by defense contractors.

¹ This case was transferred to the undersigned for adjudication on April 11, 2022, pursuant to Rule 40.1(b) of the Rules of the United States Court of Federal Claims (RCFC). *See ECF 25–26.* Briefing on the pending motions continued through February 14, 2023. *See ECF 45, 49–50, 52–56, 59–61.*

² The Court’s April 8, 2022 decision summarized the patents and the government research and development program at issue. *See Power Density*, 159 Fed. Cl. at 211–12. For clarity, the Court provides a brief recap where necessary for the analysis herein.

In their amended complaint, plaintiffs allege eleven defense contractors developed infringing products “for the United States and with the authorization or consent of the United States[,]” through their participation in the ICECool program, including: BAE Systems, Inc., Booz Allen Hamilton, International Business Machines Corp. (IBM), L3 Technologies (f/k/a L-3 Communications Holdings), Lockheed Martin Corp., Northrop Grumman Corp., Nuvotronics LLC, Raytheon BBN, Raytheon Technologies Corp., SelectTech Services Corp., and SPC Federal, LLC. *See ECF 16 at ¶¶ 9–10.* In denying the government’s motion to dismiss claims directed at certain defense contractors, the Court noted the allegations lacked detail but were nevertheless sufficient to state a claim under the “notice and plausibility” standard. *See Power Density*, 159 Fed. Cl. at 220. On June 13, 2022, the Court entered a preliminary scheduling order consistent with the parties’ joint proposal. ECF 33. The initial deadline for plaintiffs to serve their preliminary infringement contentions was August 1, 2022.

II. Infringement Contentions

After a one-week extension, on August 8, 2022, plaintiffs served their initial infringement contentions. *See ECF 45-5.* Under “Asserted Claims,” plaintiffs listed claims 1, 2, 21, and 22 of the ’992 patent, and claims 16, 17, 20, and 22 of the ’901 patent.³ *Id.* at 3. For the “Accused Products,” plaintiffs stated:

The Accused Products include electronic components and heat sinks developed in response to the [ICECool] program . . . and derivatives thereof . . . For example, the Accused Products include but are not limited to an unnamed IBM device, a Northrup [sic] Grumman device referred to as ICED 3D Integrated Fluid Manifold, an unnamed Raytheon device, and an unnamed Lockheed Martin device.

Id. The initial contentions include a claim chart for each of the four defense contractors, citing disclosures in patents and other literature in the column identifying accused products. For the asserted claims of the ’901 patent, plaintiffs cite:

Defense Contractor	U.S. Patent ⁴
Lockheed Martin	No. 10,306,802 (the ’802 patent)
Northrop Grumman	No. 9,484,284 (the ’284 patent)
Raytheon	No. 9,502,330 (the ’330 patent)

³ Although listed in the cover pleadings under Asserted Claims, plaintiffs did not provide claim charts directed to claims 21 and 22 of the ’992 patent. *Compare ECF 45-5 at 3 with id. at 7–23.*

⁴ On the face of the patents, the ’802, ’330, and ’284 patents were applied for by and assigned to Lockheed Martin, Raytheon, and Northrop Grumman, respectively.

Plaintiffs also include a quote from an unspecified “Exhibit A” in each of the three claim charts. *See ECF 45-5 at 8–9 17, 20–21.* For the asserted claims of the ’992 patent, plaintiffs cite a confidential IBM report designated as “AFRL-RY-WP-TR-2017-0064.”⁵ *See id.* at 12.

In a letter dated August 23, 2022, the government challenged plaintiffs’ reliance on theoretical products rather than existing, real-world ICECool prototypes or devices, and further requested plaintiffs address various other deficiencies to comply with the requirements of Patent Rule 4. *See Patent Rules of the Court of Federal Claims (PR-CFC) Rule 4; ECF 45-7.* After several follow-up requests from the government, the parties met and conferred on September 16, 2022, wherein plaintiffs agreed to serve supplemental contentions to correct the deficiencies. At the parties’ joint request, the Court modified the preliminary scheduling order to allow plaintiffs additional time to serve supplemental contentions by September 30, 2022. *See ECF 42 at 2–3.* Plaintiffs did not serve supplement contentions by the extended deadline.

Instead, on October 12, 2022, plaintiffs filed an untimely motion to further extend the September 30, 2022 deadline until October 14, 2022. *See ECF 43.* The motion was granted, and plaintiffs served their supplemental infringement contentions on October 14, 2022. In the supplemental contentions, plaintiffs continue to assert claims 1, 2, 21, and 22 of the ’992 patent, and claims 16, 17, and 20 of the ’901 patent.⁶ For the “Accused Products,” plaintiffs similarly state:

The Accused Products include but are not limited to electronic components and heat sinks developed in response to the [ICECool] program . . . and derivatives thereof For example, the Accused Products include but are not limited to devices implementing microvalves and integrated microchannels as taught in DARPA’s conceptual ICECool device, an IBM device referred to as an embedded two-phase liquid-cooled microprocessor (ECM), a Northrop Grumman device referred to as ICED 3D Integrated Fluid Manifold, an unnamed Raytheon device, and an unnamed Lockheed Martin device.

⁵ According to the government, the cited report is a confidential/restricted document produced under a protective order in a prior patent infringement suit litigated in the United States District Court for the Northern District of California, *Power Density Sols LLC v. IBM Corp.*, No. 19-3710 (N.D. Cal.). Plaintiffs retained the report after the case concluded in violation of the protective order. After dismissing Power Density’s complaint in part and then granting summary judgment in IBM’s favor on the remaining claims, the district court entered judgment on August 14, 2020.

⁶ Similar to their initial contentions served on August 8, 2022, although claims 21 and 22 of the ’992 patent are listed in the cover pleadings, plaintiffs did not provide claim charts directed to these claims in the October 14, 2022 supplemental contentions. *Compare ECF 45-5 at 3, 12–13 with ECF 45-10 at 3, 27–28.*

ECF 45-10 at 3 (underlining denotes modifications to corresponding statements in the August 8, 2022 initial contentions found at ECF 45-5 at 3). The appended claim charts for Lockheed Martin, Northrop Grumman, and Raytheon again cite the '802 patent, '284 patent, and '330 patent, respectively. *See id.* at 7–9, 59–61, 89–91. The claim chart for Raytheon also cites a research article authored by Raytheon personnel. *Compare* ECF 45-5 at 16–17 *with* ECF-10 at 59–60. For the asserted claims of the '992 patent, the supplemental contentions remove references to the confidential IBM report cited in the initial contentions and, instead, refer to two research articles authored by IBM personnel.⁷ *Compare* ECF 45-5 at 12–13 *with* ECF 45-10 at 27–28.

III. Motion to Strike

On October 20, 2022, the government moved to strike plaintiffs' infringement contentions, arguing that despite multiple extensions granted for plaintiffs to address identified deficiencies, the supplemental contentions remain noncompliant with the Court's Patent Rules. After reviewing the parties' filings, the Court issued an Order to Show Cause directing plaintiffs to, *inter alia*, "identif[y] with specificity" and as required under Patent Rule 4:

- a. Each and every real-world, non-theoretical and existing, accused product corresponding to the literature citations plaintiffs included in the four claim charts (ECF No. 45-10), including specifying the name, model number, or an otherwise uniquely assigned product identifier; and
- b. For each accused product sufficiently identified under the preceding paragraph, the basis supporting that such product was "developed and supplied [to] the United States" through the ICECool program.

ECF 52 at 3–4 (quoting *Power Density*, 159 Fed. Cl. at 220). Additionally, because plaintiffs' infringement contentions—initial and supplemental—are devoid of any mention of seven (of the eleven) defense contractors identified in the amended complaint, the Court "directe[d] plaintiffs to show cause why their claims against the initially-named seven (7) defense contractors not included in plaintiffs' infringement contentions, as supplemented, should not be deemed waived or

⁷ According to plaintiffs, the cited articles "publicly disclose most, if not all, of the information Plaintiffs previously relied on from the Final Report in ICECool Applications Program under the award number FA8650-14-C-7466." ECF 45-10 at 27; *see id.* at 29–58.

otherwise abandoned.”⁸ *See id.* at 2; *accord id.* at 3. Both parties timely responded to the show cause order. ECF 53–54, 60.

DISCUSSION

I. Standing

Pursuant to a March 20, 2018 assignment, Mr. Hildebrandt assigned to Power Density “the entire right, title and interest” to the ’901 and ’992 patents. *See* ECF 53-2 at 2; ECF 16 at ¶ 6. The assignment specifically included: “the right to sue for and recover damages for any infringement prior to this Assignment.” *See* ECF 53-2 at 2. Consequently, when this case was filed nearly three years later on February 10, 2021, Mr. Hildebrandt did not own any interest in either patent. As such, Mr. Hildebrandt lacks standing to pursue any infringement action under these patents. *See, e.g., Abraxis Bioscience, Inc. v. Navinta LLC*, 625 F.3d 1359, 1364 (Fed. Cir. 2010) (to establish standing “plaintiff must demonstrate that it held enforceable title to the patent at the inception of the lawsuit”); *Lans v. Digital Equip. Corp.*, 252 F.3d 1320, 1328 (Fed. Cir. 2001) (affirming dismissal where plaintiff-inventor assigned patent prior to filing action).

In their response to the Court’s Order to Show Cause, plaintiffs contend Mr. Hildebrandt’s addition was intended to circumvent the restrictions of the Assignment of Claims Act (ACA), 31 U.S.C. § 3727. Under the ACA, Power Density may only pursue patent infringement claims against the government arising after the patents were duly assigned and is thus barred from recovering pre-assignment damages (i.e., prior to March 20, 2018). *See, e.g., 3rd Eye Surveillance, LLC v. United States*, 133 Fed. Cl. 273, 277–78 (2017) (discussing ACA purpose and application in the patent infringement context). As this Court has explained: “Assignments of patent rights are subject to the [ACA], and voluntary assignments of patent claims are ineffective against the government unless they qualify for [a] judicially-recognized exception[] or otherwise do not run afoul of the purposes of the Act.” *Id.* at 277. Plaintiffs do not dispute the constraint imposed by the ACA or seek to qualify under a judicially-recognized exception.⁹ *See* ECF 53 at 2 (recognizing “[Power Density] is barred from receiving pre-Assignment infringement damages”).

⁸ The seven defense contractors identified in the amended complaint but not included in plaintiffs’ infringement contentions, as supplemented, include: BAE Systems, Inc. (BAE), Booz Allen Hamilton, L3 Technologies (f/k/a L-3 Communications Holdings), Nuvotronics LLC, Raytheon BBN, SelectTech Services Corp., and SPC Federal, LLC.

⁹ Judicially-recognized exceptions neither claimed nor applicable here include “transfers by will or ‘general assignments for the benefit of creditors.’” *See 3rd Eye Surveillance*, 133 Fed. Cl. at 277 (quoting *United States v. Shannon*, 342 U.S. 288, 292 (1952) (citing cases)).

Plaintiffs' position improperly conflates the requirements of constitutional standing and the ACA restrictions involving patent infringement claims against the United States. At bottom, as the sole owner of the asserted patents at the time this suit was filed, Power Density stands as the only plaintiff satisfying the constitutional standing requirements. Accordingly, the Court must terminate Mr. Hildebrandt as an improper plaintiff for lack of standing.

II. Infringement Contentions

A. Legal Standard

A plaintiff asserting patent infringement is required to serve its preliminary infringement contentions early in the litigation, generally within two months after the defendant files an answer to the complaint. *See PR-CFC 4*. Under Patent Rule 4, preliminary infringement contentions must identify each asserted claim and for each asserted claim, each accused infringing product; the contentions must also include a claim chart explaining where each element of each asserted claim is present in the accused product. *Id.; see, e.g., Golden v. United States (Golden I)*, No. 13-307, 2021 WL 3238860, at *3–4 (Fed. Cl. July 29, 2021) (discussing patent rule requirements for infringement contentions).

The purpose of the required detail and specificity “is to put a defendant on notice of all contentions regarding how each claim limitation is allegedly met by the accused device.” *Iris Corp. Berhad v. United States*, 84 Fed. Cl. 12, 16 (2008) (citing *O2 Micro Int'l Ltd. v. Monolithic Power Sys., Inc.*, 467 F.3d 1355, 1362–63 (Fed. Cir. 2006); *Refac Int'l, Ltd. v. Hitachi Ltd.*, 921 F.2d 1247, 1255 (Fed. Cir. 1990)), quoted in *Golden*, 2021 WL 3238860, at *3. As the Court recently observed, such requirements “serve an important function—to narrow and focus the issues and theories that must be pursued during the litigation.” *Golden v. United States (Golden II)*, 156 Fed. Cl. 623, 632 (2021), aff'd, No. 2022-1196, 2022 WL 4103287 (Fed. Cir. Sept. 8, 2022). Plaintiffs' lack of specificity in their infringement contentions fails to focus the issues for discovery and claim construction and, concomitantly, frustrates defendant's ability to formulate its defense.

B. Accused Devices

Proper infringement contentions must identify “each product, process, or method that allegedly infringes.” PR-CFC 4(b). Despite a series of extensions, plaintiffs' assurances to correct identified deficiencies, and the Court's show cause order, plaintiffs' infringement contentions, as supplemented, fail to identify a single real-world device that allegedly infringes the asserted patents. Plaintiffs' continued invocation of generic “ICECool Products” and references to solutions or instrumentalities described in patents and research literature, *see generally* ECF 45-10, deprive defendant of reasonable and fair notice of plaintiffs'

infringement theories. Likewise, the Court is left to speculate what issues and theories plaintiffs intend to pursue. More than a perfunctory submission, the required early exchange of contentions is designed to prevent the exact situation presented here. *See, e.g., Golden II*, 156 Fed. Cl. at 627 (infringement contentions must be specific enough to put opposing party and the court on notice of plaintiff's position to focus issues for discovery and trial).

1. The '901 Patent

In the cover pleading of their infringement contentions, plaintiffs describe the accused devices as "Government devices or systems that incorporate one or more electronic components or heat sinks utilizing evaporative cooling." ECF 45-10 at 3.¹⁰ In the claim charts directed at Lockheed Martin, Raytheon, and Northrop Grumman, plaintiffs cite disclosures in three patents (i.e., the '802 patent, the '330 patent, and the '284 patent, respectively) as infringing claims 16, 17, 20, and 22 of the '901 patent. *See* ECF 45-10 at 7, 59, 89. For the claim limitation of "means for adjusting the rate at which said cooling fluid passes through said interior passageway so that substantially no cooling liquid is vaporized within said interior passageway," plaintiffs further cite "page 174 of Exhibit A" for Lockheed Martin and Northrop Grumman, and a research article authored by Raytheon personnel. *See* ECF 45-10 at 9, 91 (chart for claim 20); *id.* at 60 (chart for claim 16). Plaintiffs did not produce "Exhibit A" with their August 8, 2022 preliminary infringement contentions or their October 14, 2022 supplemental contentions; nor is the referenced document in the record before the Court.¹¹

Plaintiffs fail to identify any specific real-world products or instruments by name, model number, or other unique identifying characteristic. Vague and generic product descriptions and references to patent literature do not satisfy Patent Rule 4's required identification of a "product . . . that allegedly infringes the identified claim." *See* PR-CFC 4(b); *see, e.g., Demodulation, Inc. v. United States*, 126 Fed. Cl. 499, 510 (2016) (finding insufficient "vague and overly broad device descriptions" and "conjectural and hypothetical" products described in

¹⁰ Plaintiffs' cover pleading lists "a Northrop Grumman device referred to as ICED 3D Integrated Fluid Manifold." ECF 45-10 at 3. Plaintiffs' infringement contentions do not include any additional identifying information for the referenced device or explain how it allegedly infringes the asserted patents. As to Lockheed Martin and Raytheon, plaintiffs' cover pleading refers to "unnamed device(s)." *See id.*

¹¹ The "Exhibit A" quote describes certain intended or desired performance, as may appear in documentation relating to the underlying procurement or research initiative. To the extent plaintiffs attempt to rely on the procurement initiative as allegedly infringing products, such citation does not suffice for the required product identification under the Patent Rules. As this Court has observed: "A procurement initiative is not a product or a method. At most, it is an ambition." *Golden I*, 2021 WL 3238860, at *5 (finding infringement contentions insufficient where plaintiff cited government procurement initiative as meeting claim limitations).

literature); *id.* at 507 (“In the absence of any identification of an actual accused device, Plaintiff’s mere references to patents held by the Government do not amount to identification of an accused device.”). Plaintiffs’ contentions for claim 20 (and its dependent claim 22) directed at Lockheed Martin and Northrop Grumman also fail to establish how the instrumentalities implicated in “Exhibit A” relate to the cited patent literature, or how the exhibit relates to actual products developed and supplied to the government through the ICECool program. Plaintiffs’ contentions regarding asserted claims 16 and 17 directed at Raytheon with respect to the cited research article are similarly deficient.

2. The ’992 Patent

For the ’992 patent, plaintiffs assert the accused products include “an IBM device referred to as an embedded two-phase liquid-cooled microprocessor (ECM),” citing the description of a proposed cooling solution in two articles published by IBM research personnel.¹² ECF 45-10 at 3, 27–57. The infringement contentions do not include additional identifying information indicating whether the literature description relates to a real-world product or how that product is physically configured. Additionally, even if the referenced device exists, it remains unclear whether it was designed for and delivered to the United States under the ICECool program.¹³

C. Claim Limitations

The government contends plaintiffs also fail to identify how each claim limitation is found in the accused devices as required under PR-CFC 4(c). The Court agrees. Setting aside plaintiffs’ deficient identification of accused devices, and assuming arguendo that plaintiffs’ claim chart citations relate to actual products, plaintiffs’ cited descriptions nonetheless fail to state where and how any accused device incorporates each claim limitation.

¹² As noted *supra*, the cover pleading of plaintiffs’ infringement contentions lists four asserted claims of the ’992 patent (i.e., claims 1, 2, 21 and 22), but the claim charts only include claims 1 and 2.

¹³ To be clear, both articles reference the ICECool program in their respective acknowledgements. See ECF 45-10 at 40 (authors extending thanks to IBM personnel “involved in the ICECool programs”); *id.* at 50 (noting research “was supported in part” by the ICECool program and disclaiming that the article represents IBM authors’ opinions only). While such mention may aid in satisfying the “plausibility” pleading standard, it does not satisfy the specificity required under PR-CFC 4. See, e.g., *Iris Corp. Berhad v. United States*, No. 15-175C, 2019 WL 2317143, at *3 (Fed. Cl. May 8, 2019) (“When arguing that the court should deny the government’s motion to dismiss, plaintiff was correct that it could plead infringement broadly and nail down its theories in its disclosures. Now is the time to be specific so that the parties and the court can focus their attention on the pertinent accusations during claim construction.”).

For example, each of the four asserted claims of the '901 patent requires, *inter alia*, a “means for adjusting the rate at which said cooling fluid passes through said interior passageway so that substantially no cooling fluid is vaporized within said interior passageway.” *See* '901 patent, col. 14:17–20, 48–51. For this limitation, plaintiffs’ claim charts state:

Lockheed Martin: “Because the '802 patent discusses varying the pressure of fluid, it inherently includes a means for adjusting the desired flow rate. See, e.g., Col. 4: 53-55 (“Depending on the desired flow rate, fluid supplied to the jets 40 may be pressurized to approximately 30 to 100 pounds per square inch (PSI).”.)” *See* ECF 45-10 at 8.

Raytheon: “Col. 6:31-35 (‘Partitions 50 (FIG. 1A) between micro-channels 26 are strategically located in proximity to the HEMT 20 being cooled to maximize conjugate convection/conduction) heat transfer performance.’). See also Ex. 1 (‘Performance is optimised [sic] by placing the channels next to the hot spots of the GaN-on-diamond MMIC, and using a silicon manifold layer to regulate the direction, flow rate, and pressure of the coolant.’).” *See id.* at 60–61 (citing disclosure in the '330 patent and a research publication by Raytheon personnel).

Northrop Grumman: “Pump 92 inherently includes a means for adjusting the flow rate.” *See id.* at 90 (citing the '284 patent).

Lockheed Martin & Northrop Grumman (identical entry): “As stated on page 174 of Exhibit A, ‘in the interest of achieving near-term system insertions of ICECool Apps technology, proposers will apply embedded microfluidic thermal management techniques to existing liquid-cooled systems, in which the external thermal management hardware (pumps, valves, heat exchangers, etc.) can be harnessed in an ICECool-driven design[.]’” *See id.* at 9 (Lockheed Martin); *id.* at 91 (Northrop Grumman).

None of the cited descriptions disclose the claimed means for adjusting the cooling fluid flow rate. Instead, they either fail to identify any corresponding structure or, at most, reference a general structural component (e.g., “[p]artitions,” “silicon manifold layer,” “[p]ump”) without addressing the specific restrictions built into the claim limitation (i.e., “adjusting the rate at which said cooling fluid passes through said interior passageway so that substantially no cooling fluid is vaporized within said interior passageway.”). References to components merely “capable of operating in a manner that infringes” do not suffice to identify which component meets the claim limitation and functions as claimed. *See Golden II*, 156 Fed. Cl. at 630; *see also* e.g., *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1330 (Fed. Cir. 2001) (“[T]hat a device is capable of being modified to operate in an infringing manner is not sufficient, by itself, to support a finding of infringement.”).

Likewise, plaintiffs' claim charts for asserted claim 2 of the '992 patent suffer the same flaw. Claim 2 recites, in part, "means for controlling the flow rate of said cooling fluid so that at least some of the fluid flowing through said other passageways vaporizes prior to contact with the surface of said component to cool the component through both conductive and evaporative cooling." See '992 patent, col. 10: 32–37. In their claims charts, plaintiffs solely reference a "flow meter in Fig. 11," which is a "Schematic of the test system" in one of two cited articles, without addressing whether or how this "flow meter" functions in the same manner as claimed. See ECF 45-10 at 28, 36.

For the foregoing reasons, plaintiffs' supplemental infringement contentions fail to articulate any infringement theory with the specificity necessary to provide reasonable notice to the defendant. As such, they must be stricken. *See Golden I*, 2021 WL 3238860, at *3 ("[D]eficient infringement contentions fail to provide defendant with notice and thereby prejudice defendant's ability to proceed with its own invalidity and claim construction disclosures.").

III. Leave to Amend

Urging the Court to strike plaintiffs' infringement contentions, as supplemented, the government argues no good cause exists warranting further leave to amend. The Court agrees. Plaintiffs have had ample notice of the deficiencies—including the Court's show cause order—and several opportunities to provide compliant contentions. Plaintiffs' lack of due diligence, despite their repeated commitments to remedy the deficiencies, negates a finding of good cause and warrants dismissal under RCFC 41(b) for failure to prosecute.

To amend infringement contentions once served, a plaintiff must seek leave of the Court upon a showing of good cause. *See PR-CFC 24.* "Establishing good cause requires a showing that the moving party acted with diligence and that the amendment would not prejudice the non-moving party." *ACME Worldwide Enters., Inc. v. United States*, No. 17-843, 2022 WL 6853387, at *2 (Fed. Cl. Oct. 11, 2022); *see also O2 Micro*, 467 F.3d at 1366 (discussing local patent rule requiring good cause for amending contentions, noting party seeking to amend must demonstrate due diligence). If the Court finds the moving party did not act diligently, the Court need not address the prejudice factor. *See, e.g., ACME*, 2022 WL 6853387, at *2.

Plaintiffs assert their "infringement contentions in their initial or current form are sufficient," and, in one sentence, generally request an additional opportunity to supplement if the Court finds otherwise. *See ECF 49 at 3, 6.* Plaintiffs fault the government for "incorrect[ly] . . . portray[ing them] as having conceded that their initial infringement contentions were deficient[.]" *Id.* at 2. Plaintiffs' representations to defendant and the Court belies this assertion.

In requesting additional time to supplement their initial contentions, plaintiffs agreed “to address the issues raised in the Government’s [August 23, 2022] correspondence.” ECF 41 at 3; *see also* ECF 45-8 (parties’ exchange regarding government-raised deficiencies and joint motion to modify case schedule). In subsequently seeking additional time—in an untimely motion filed 12 days after the already-extended September 30, 2022 deadline—plaintiffs represented to the Court:

Plaintiffs will fully and completely address the *deficiencies* in Plaintiffs’ infringing contentions that were previously raised in the Government’s August 23, 2022 correspondence including but not limited to the identification of each and every product, process, or method that allegedly infringes each asserted claim and how the accused products, processes, or methods infringe.

ECF 43 at 3 (emphasis added). As memorialized in plaintiffs’ motion, the government consented to the requested extension on the condition that plaintiffs would “fully and completely” address the identified deficiencies. *See id.* at 4. Plaintiffs’ commitment did not materialize. As discussed *supra*, plaintiffs’ contentions, as supplemented, include the same deficiencies the government identified since at least August 23, 2022.

Moreover, in their five-page response to the government’s motion to strike, plaintiffs summarily assert that the government’s productions were limited or “included irrelevant information.” ECF 49 at 4. The Court finds this post hoc excuse unconvincing. Having had the government’s initial and follow-up production since July and August 2022, respectively, plaintiffs had ample opportunity to request additional discovery and, if unsuccessful, seek court intervention through a motion to compel. They did neither. Instead, plaintiffs first criticized the government’s document production on October 17, 2022—over two weeks after missing the (previously extended) September 30, 2022 deadline, and three days after serving deficient supplemental contentions. *See* ECF 45-1 at 2; ECF 45-6 at 2; ECF 50-1 at 2–3.

Plaintiffs’ response did not identify specific issues with the government’s productions that purportedly hindered plaintiffs’ preparation of their infringement contentions; nor did they detail any effort to pursue additional discovery, the scope of contemplated discovery, or how the discovery would yield information critical to their contentions. *See generally* ECF 45-1; *see also* ECF 50-2 at 2–3 (government’s November 3, 2022 renewed request for identification of specific production deficiencies and to meet and confer). Plaintiffs’ general reference to “upcoming third-party discovery” is similarly unconvincing. ECF 49 at 6.

Tellingly, in contrast to the government's itemized deficiencies for each defense contractor, plaintiffs' response only addressed the claim charts for Lockheed Martin. The two-page argument section—aside from reproducing the text of Patent Rule 4 and an unidentified and unsourced product image discussed *infra*—provides little substantive response beyond a blanket assertion that Patent Rule 4's requirements are satisfied.¹⁴ With regard to IBM, Raytheon, and Northrop Grumman, plaintiffs' combined response consists of the following statement: "The other three claim charts for IBM, Raytheon, and Northrup [sic] Grumman are similarly sufficiently supported." ECF 49 at 6.

Plaintiffs did not respond to or otherwise contest the government's August 23, 2022 representation—documented in the ICECool program final reports produced on July 22, 2022—that [XXXXXX] did not deliver any prototypes to the government and, therefore, no infringing products could be identified. *See, e.g.*, ECF 45-7 at 6; [XXXXXX] ("[T]he final technical reports for both [XXXXXX] make clear that no prototype or device that could plausibly be accused of infringement was ever delivered to the Government in connection with the ICECool Applications Program."). For IBM, plaintiffs continued to disregard, among other deficiencies the government noted, the two uncharted claims listed in the cover pleading.

On December 15, 2022, after reviewing the parties' filings, the Court issued an Order to Show Cause directing plaintiffs to clarify and specifically identify accused real-world, non-theoretical products—granting plaintiffs an additional 45 days to cure the deficiencies in their infringement contentions. *See* ECF 52 at 2–3. Plaintiffs responded by repackaging the deficient product identification included in their initial contentions, citing the same product images, and again relying on research and patent literature.¹⁵ Compare ECF 45-10 with ECF 54. Regarding their position that the accused devices were developed for and supplied to the United States through the ICECool program, plaintiffs cite the same article describing research initiatives (for Lockheed Martin and Raytheon), a photo of

¹⁴ Addressing the specific product identification required under PR-CFC 4(b), plaintiffs point to a claimed product image asserting: "a picture conveys more meaning than a mere description." ECF 49 at 5. Whatever meaning an unidentified and unsourced picture might convey, it does not translate to compliance with PR-CFC 4(b) or provide the requisite notice of infringement.

¹⁵ For example, regarding the identification of accused ICECool products purportedly developed by Lockheed Martin, plaintiffs' response cites: the same unidentified and unsourced product image noted above; "[a] circuit die 31" described in the '802 patent; and a quote from an April 24, 2018 research article generally describing initiatives to develop electronics cooling solutions. *See* ECF 54 at 1–2. Plaintiffs do not elaborate on the "tested amplifiers" noted in the article, *see* ECF 54-2 at 9, or explain how they relate to the unsourced image or patent literature citations. Nor do plaintiffs address the article's ambivalent forecast that integration of the technology was *possible* "within a year" or that the technology might undergo further development "within a few years." *See id.* at 10. As noted *supra*, the '901 patent and '992 patents expired 20 months after the cited article was published.

technology showcased at a conference (for IBM), and several newly cited research articles (for Northrop Grumman).¹⁶ ECF 54 at 5–7.

Like the literature citations included in plaintiffs' infringement contentions, nothing in the record supports findings that the solutions referenced in the cited patents and articles correspond to real-world devices, represent the same instruments depicted in the cited images, or were developed for and supplied to the government through the ICECool program. Putting aside the lack of record evidence corroborating the quoted statements in the cited articles, neither general descriptions of research purportedly conducted by the contractors or aspirational descriptions of proposed research satisfy plaintiffs' burden under Patent Rule 4.

Further, as noted *supra*, plaintiffs identified seven other defense contractors in their amended complaint but did not mention any of them in their infringement contentions, as supplemented. Plaintiffs have not identified any accused devices these contractors purportedly developed through their involvement in the ICECool program or any claim(s) each such device allegedly infringed, let alone chart such devices against the asserted claims. Nor did plaintiffs, in response to the show cause order, attempt to substantiate their infringement allegations with respect to any of the seven defense contractors. Having failed to identify any accused products and set forth a viable infringement theory despite receiving relevant document production in July and August 2022, plaintiffs have abandoned these claims.¹⁷ See, e.g., *Finjan, Inc. v. Proofpoint, Inc.*, No. 13-5808, 2015 WL 1517920, at *5 (N.D. Cal. Apr. 2, 2015) (infringement allegations limited to products expressly identified in infringement contentions).

At bottom, plaintiffs' repeated failure to comply with the Patent Rules, despite notice of specific deficiencies and multiple opportunities to remedy and adequately articulate an infringement theory, compels the conclusion that it cannot be done. The Court finds no good cause exists warranting further leave to amend. This action must therefore be dismissed. See *Golden II*, 156 Fed. Cl. at 627, 632 (discussing functions of Patent Rule 4's specificity requirements, noting: "It is . . .

¹⁶ For IBM, the cited image from a GOMACTech conference—reproduced from a restricted report subject to the Protective Order entered in this case—prompted defendant's motion to seal, which the Court addressed during oral argument on March 14, 2023. Beyond the cited image—and illustrative of plaintiffs' response to the show cause order in general—plaintiffs simply assert: “GOMACTech was established primarily to review developments in microcircuit applications for government systems.” ECF 54 at 6. The response did not explain the relevance of the cited image or how the referenced [XXXXXX] connects to the unidentified image or literature citations in the infringement contentions or any allegedly infringing products.

¹⁷ The record before the Court indicates that only 2 of the 7 identified contractors were involved in the ICECool Applications phase and neither [XXXXXX] produced a prototype or other system to the government at the conclusion of the program. See ECF 45-14 (DARPA Final Report) at 3, 14–18, 22–23.

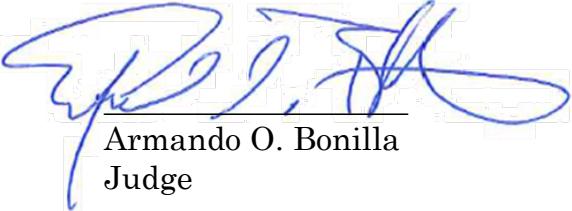
not a triumph of form over function to dismiss the case for plaintiff's repeated failure to [serve proper infringement contentions]."); *see, e.g., Xiaohua Huang v. MediaTek USA, Inc.*, 815 F. App'x 521, 525 (Fed. Cir. 2020) (affirming district court's dismissal due to plaintiffs' repeated failure to serve proper infringement contentions).

CONCLUSION

For the foregoing reasons,

- (1) The Clerk of Court is directed to **LIFT** the Stay (ECF 47);
- (2) Plaintiff James J. Hildebrandt is **TERMINATED** for lack of standing;
- (3) The Clerk of Court is directed to **TERMINATE** plaintiff James J. Hildebrandt from this matter;
- (4) Defendant's Motion to Strike Plaintiffs' Preliminary Infringement Contentions (ECF 45) is **GRANTED**; and
- (5) The Clerk of Court is directed to **DISMISS** this action for failure to prosecute in accordance with RCFC 41(b) and **ENTER** Judgment accordingly. Costs to defendant.

It is so **ORDERED**.



Armando O. Bonilla
Judge